UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,359	05/15/2006	Mark E. Ehrhardt	2004UR032	2980

7590 01/29/2010

Charles E. Smith
ExxonMobil Upstream Research Company
P.O. Box 2189
CORP-URC-SW348
Houston, TX 77252-2189

EXAMINER	
NIESZ, JASON KAROL	
ART UNIT	PAPER NUMBER
3751	

MAIL DATE	DELIVERY MODE
01/29/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/579,359	EHRHARDT ET AL.	
	Examiner	Art Unit	
	JASON K. NIESZ	3751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-96* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10-39,47-81 and 87-96* is/are rejected.

7)☒ Claim(s) *5-9,40-46 and 82-86* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 May 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/15/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 05/15/2006 was considered by the examiner.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the circulatory conduit of claims 10, 57 and 87 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10, 49-79, 87 and 94 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Re claims 10, 57 and 87, it is not clear from applicant's disclosure how a circulatory conduit connected between the connector and the supply conduit can provide circulation as claimed.

In Re claims 49-79, claim 49 recites the limitation "the method of claim 37". Claim 37 is an apparatus claim. It seems evident that the applicant intended for claims 49-79 to depend from claim 48. For the purpose of the application of prior art, claim 49 will be addressed as though it depends from claim 48.

In Re claim 94, it is not clear from applicant's disclosure how or why the cryogenic fluid is returned back to said facility from said floating vessel.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3, 11-14, 16-22, 24, 27, 29-31, 34-38, 48-50, 58-61, 63-66, 68, 69 and 72-80, 88 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breivik et al. (US Patent 6,003,603) in view of Espinasse (US PGPub 2006/0048850).

In Re claim 1 with reference to Figure 1 Breivik discloses a system for transporting cryogenic fluid between a floating vessel and a second location comprising a first cryogenic riser (line 14 between ship 15 and manifold 21) and a first submersible swiveling turret connector (16) being moored to the bottom of the ocean (18).

Breivik doesn't disclose insulation.

With reference to Figure 1 Espinasse discloses a cryogenic transfer pipeline which is provided with insulation (44). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Breivik apparatus by insulating both the riser pipes and the portion of the pipes which rests on the ocean bottom, in order to prevent undesired pressurization of the cryogenic fluid.

In Re claim 2 with reference to Figure 1 Breivik discloses a cryogenic fluid conduit (14) in communication with a second location (1).

In Re claim 3 Breivik discloses all the limitations, but doesn't disclose insulation.

With reference to Figure 1 Espinasse discloses a cryogenic transfer pipeline which is provided with insulation (44). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Breivik apparatus by insulating both the riser pipes and the portion of the pipes which rests on the

ocean bottom, in order to prevent undesired pressurization of they cryogenic fluid.

In Re claims 11, 12, 13 and 14 with reference to Figure 1 Breivik discloses a flexible hose (14) which is adapted to changing the vertical distance between its first and second end in order to connect to said first vessel (15) at a point below the surface of the water.

In Re claims 16 and 17 with reference to Figure 1 Breivik discloses a facility (1) in the form of a second floating vessel.

In Re claim 18 Breivik discloses all the limitations, but doesn't disclose a land based structure: Breivik is directed towards a floating facility which harvests LNG at sea. One of ordinary skill in the art would recognize that the Breivik apparatus could be used advantageously to load a tanker from a land facility rather than a second floating vessel.

In Re claims 19-21 with reference to Figure 1 Breivik discloses a second connector (7), adapted for releasably connecting to the second vessel and moored to the bottom of the ocean (10).

In Re claim 22 it would have been obvious to one of ordinary skill in the art to use insulation having a thermal conductivity of less than 1.0 w/m-C, since discovering the optimum value of a variable in question requires only routine skill in the art.

In Re claim 24 with reference to Figure 1 Breivik discloses a portion of said pipeline at the bottom of said body of water, (the portion to the left of manifold 21).

In re claim 27 with reference to Figure 1 Breivik discloses a splitter manifold (21) in communication with an alternative submersible turret assembly (19).

In Re claim 29 it would have been obvious to one of ordinary skill in the art to allow the vertical position of said first connector to be changed within the claimed range, since discovering the optimum working range of a variable requires only routine skill in the art.

In Re claim 30 it would have been obvious to one of ordinary skill in the art that the first vessel and the second location could be separated by a distance of more than a kilometer. Since discovering the optimum working range of a variable requires only routine skill in the art.

In Re claim 31 with reference to Figure 1 Breivik discloses a submerged turret connector (16).

In re claims 34 and 35 with reference to Figure 1 Breivik discloses a floating cryogenic carrier vessel (15).

In Re claims 36 and 37 it would have been obvious to one of ordinary skill in the art to adapt the connector and the pipeline conduit to transfer cryogenic fluid in any necessary temperature range.

In Re claim 38 with reference to Figure 1 Breivik discloses a system for transporting cryogenic fluid between a floating vessel and a second location comprising a first cryogenic riser (line 14 between ship 15 and manifold 21) and a first submersible swiveling turret connector (16) being moored to the bottom of

the ocean (18). Furthermore, Breivik discloses a cryogenic fluid conduit (14) in communication with a second location (1).

Breivik doesn't disclose insulation.

With reference to Figure 1 Espinasse discloses a cryogenic transfer pipeline which is provided with insulation (44). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Breivik apparatus by insulating both the riser pipes and the portion of the pipes which rests on the ocean bottom, in order to prevent undesired pressurization of the cryogenic fluid.

Claim 48 is rendered obvious by Breivik in view of Espinasse as applied to claim 1 above.

Claim 49 is rendered obvious by Breivik in view of Espinasse as applied to claim 2 above.

Claim 50 is rendered obvious by Breivik in view of Espinasse as applied to claim 3 above.

Claims 58-61 are rendered obvious by Breivik in view of Espinasse as applied to claims 11-14 above.

Claim 62 and 63 are rendered obvious by Breivik in view of Espinasse as applied to claims 16 and 17 above.

Claim 65 is rendered obvious by Breivik in view of Espinasse as applied to claim 18 above.

Claim 66 is rendered obvious by Breivik in view of Espinasse as applied to claim 24 above.

Claim 68 is rendered obvious by Breivik in view of Espinasse as applied to claim 29 above.

Claim 69 is rendered obvious by Breivik in view of Espinasse as applied to claim 30 above.

Claims 72 and 73 are rendered obvious by Breivik in view of Espinasse as applied to claims 34 and 35 above.

In Re claim 74 it would have been obvious to one of ordinary skill in the art to use the Breivik apparatus to transport any necessary cryogenic fluid, including one of greater than 50 weight percent methane.

In Re claims 75 and 76 it would have been obvious to one of ordinary skill in the art to use the connector and the pipeline conduit of Breivik to transfer cryogenic fluid in any necessary temperature range.

In Re claims 77-79 the steps of transporting a seagoing cryogenic fluid carrier to land where said cryogenic fluid is vaporized for use is old and well known in the art. It would have been obvious to transport the cryogenic fluid in the Breivik carrier to land and to there vaporize it for further use, in order to make use of the harvested cryogenic fluid.

Claims 80 and 90 are rendered obvious by Breivik in view of Espinasse as applied to claim 38 above.

In Re claims 88 and 89 with reference to Figure 1 Breivik discloses a flexible hose (14) which is adapted to changing the vertical distance between its first and second end in order to connect to said first vessel (15) at a point below the surface of the water.

In Re claim 91 with reference to Figure 1 Breivik discloses a facility (1).

In Re claims 92-94 one of ordinary skill in the art would know to use the Breivik apparatus to transfer cryogenic fluid in either direction as needed.

In Re claims 95 and 96 the steps of transporting a seagoing cryogenic fluid carrier to land where said cryogenic fluid is vaporized for use is old and well known in the art. It would have been obvious to transport the cryogenic fluid in the Breivik carrier to land and to there vaporize it for further use, in order to make use of the harvested cryogenic fluid.

7. Claims 4, 23, 26, 32, 33, 39, 51, 70, 71 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breivik in view of Espinasse and in further view of Sigmundstad (US Patent 5,697,732).

In Re claims 4, 32 and 33 Breivik in view of Espinasse as applied to claim 3 above discloses all the limitations, but doesn't disclose multiple riser conduits.

With reference to Figure 2 Sigmundstad discloses a fluid transfer apparatus comprising a rotating turret (3) having multiple internal passageways (15) connected to multiple riser conduits (12-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Breivik apparatus by using multiple riser conduits to connect to multiple internal passageways inside the turret connector, in order to add redundant systems to the riser to allow it to function in the event of damage to one of the conduits.

In Re claim 23 with reference to Figure 1 Breivik discloses a manifold (21). It would have been obvious to one of ordinary skill in the art to use a similar manifold when adding additional riser conduits, as discussed in Re claim 4.

In Re claim 26 shut off valves were well known in the art at the time of the invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to equip the Breivik manifold with shut off valves, in order to isolate and cut of a leaking riser conduit.

In Re claim 39 Breivik in view of Espinasse as applied to claim 38 above discloses all the limitations, but doesn't disclose multiple riser conduits.

With reference to Figure 2 Sigmundstad discloses a fluid transfer apparatus comprising a rotating turret (3) having multiple internal passageways (15) connected to multiple riser conduits (12-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Breivik apparatus by using multiple riser conduits to connect to multiple internal passageways inside the turret connector, in order to add redundant systems to the riser to allow it to function in the event of damage to one of the conduits.

Claims 51, 70 and 71 are rendered obvious by Breivik in view of Espinasse and Sigmundstad as applied to claim 4 above.

Claim 81 is rendered obvious by Breivik in view of Espinasse and Sigmundstad as applied to claim 39 above.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breivik in view of Espinasse and in further view of De Baan et al. (US Patent 5,044,297).

In Re claim 15 Breivik in view of Espinasse as applied to claim 15 above discloses all the limitations, but doesn't disclose a connector adapted for connecting to said first vessel above the surface of said body of water.

De Baan discloses a fluid transfer apparatus comprising a connector turret which is adapted to connect to vessels both below (Figure 4) and above (Figure 5) the surface of the water.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Breivik apparatus by adapting the turret connector to connect to a vessel both below and the above the surface of the water, in order to adapt the apparatus to service a wider range of vessels.

Claim 62 is rendered obvious by Breivik in view of Espinasse and De Baan as applied to claim 15 above.

9. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breivik in view of Espinasse and in further view of Poldervaart (US Patent 6,517,290).

In Re claim 25 Breivik in view of Espinasse as applied to claim 2 above discloses all the limitations, but doesn't disclose the pipeline conduit being suspended within the body of water.

With reference to Figure 8 Poldervaart discloses a fluid transfer apparatus comprising a ship to ship conduit (41) which is suspended in a body of water.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Breivik apparatus by suspending the conduit (14) in the body of water, in order to allow the apparatus to function in areas with an extremely deep or uneven bottom.

Claim 67 is rendered obvious by Breivik in view of Espinasse and Poldervaart as applied to claim 25 above.

10. Claim 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Breivik in view of Espinasse and in further view of Burns (US Patent 3,568,737).

In Re claim 28 Breivik in view of Espinasse as applied to claim 1 above discloses all the limitations, but doesn't disclose a messenger buoy.

With reference to Figure 1 Burns discloses an underwater fluid transfer apparatus comprising a messenger buoy (57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Breivik apparatus by equipping the turret connector with a messenger buoy, in order to aid a ship in locating the connector.

Allowable Subject Matter

11. Claims 5-9, 40-46 and 82-86 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claims 10, 52-57 and 87 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON K. NIESZ whose telephone number is (571)270-3920. The examiner can normally be reached on mon-fri 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gregory L. Huson/
Supervisory Patent Examiner, Art Unit 3751

Jason K Niesz
Examiner
Art Unit 3751

***